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ABSTRACT

Intended for use with a companion student manual, this teacher's guide lists procedures and teaching tips for each unit of a secondary or postsecondary course of study in typography and modern typesetting. Course objectives are listed for developing student skills in the following preparatory functions of the graphic communications industry: copy preparation, art preparation, typography, camera, stripping, production management, and forms design, preparation, and analysis. A bibliography lists recent works covering all areas of the trade. Unit headings are as follows: (1) Exploring Graphic Communications, (2) Shop Rules and Safety, (3) History and Technical Background, (4) Work Flow in a Modern Shop, (5) Typography, (6) Copyfitting, (7) CompuWriter I, (8) IBM Selectric Composer, (9) Comp/Set, and (10) Proofreading. (The student's manual, available separately, contains objectives, information (text), references, and student assignments or activities for each unit.) (JT)

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State of New Jersey
Department of Education
Division of Vocational Education

GRAPHIC COMMUNICATIONS — PREPARATORY AREA

BOOK I – TYPOGRAPHY and MODERN TYPESETTING

Teacher's Manual

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GRAPHIC COMMUNICATIONS* – Introduction

A New Approach in Teaching Graphic Communications

Few industries have been as dramatically affected by the technological explosion as has the Graphic Communications industry. Side by side with the technological changes, the industry has become increasingly diversified, but the school environment has been slow to reflect the changes taking place. These courses of study have been designed to more closely simulate industry practices and thereby afford the student the opportunity to acquire the skills demanded by industry.

It is logical to divide instruction in Graphic Communications into two very distinct areas of study, namely **Preparatory** (or **Prep**, as it is referred to in the trade) and **Mechanical** (the area comprising presswork, binding, and electronic transmission of information). Let us examine these two areas.

Graphic Communications – Preparatory

Prep work is a term which has caused some confusion in the layman's mind, since it connotes beginning studies. Actually it applies to the highly skilled areas of copy and art preparation, typography, pasteup, makeup, process photography, and negative stripping. It is precisely in those preparatory areas that the majority of the technological advances are taking place and in which the Graphic Communications industry has placed its demand for skilled and knowledgeable technicians. It is an area with particular appeal to those students with a good grasp of the rules of English and the sciences. It is also the point at which women have found entry to the industry. Typography, with the introduction of advanced phototypesetting methods using standard typewriter keyboards and computer technology, has opened a whole new field for men and women with good typing and computer skills. The new developments have also created a demand for individuals with an expertise in copy and art preparation, skilled in formatting raw copy prior to typesetting, and knowledgeable in the proofreading requirements for accurate presentation of the final product.

Treating Preparatory Work as a distinct and separate study serves to satisfy the real needs of the industry by attracting those students who would otherwise turn away from the presswork and finishing operations. The Prep Area should also include peripheral operations required by the industry, such as Production Management, Forms Design and Analysis, and Printing Estimating.

*Graphic Communications was formerly referred to as Graphic Arts and prior to that, as Printing.

Mechanical Work, with its emphasis on platemaking, press operation, paper cutting and all of the varied finishing operations, is designed to appeal to those students with good mechanical aptitudes, good mathematical skills, and the ability to work with and to maintain high-speed equipment while satisfying the requirements of industry for skilled craftsmen in the trade.

Since **lithography** has emerged as the industry's major reproduction method, emphasis is placed on this method. The student should gain proficiency in the techniques of platemaking and press operation, as well as become familiar with the various press systems and their proper maintenance. While **letterpress** is gradually being phased out by the industry (at best it remains an adjunct to offset printing), it is important that the student understand the principles of relief printing; such opportunity presents itself with the student's operation of the platen press, the showcard machine, and the proofing press. **Intaglio, silkscreen and electrostatic methods** of reproduction will be presented to the student through the use of motion pictures, filmstrips, guest lecturers, and field trips to appropriate plants. The students will also have the opportunity of visiting television studios to observe firsthand the techniques of electronic communications.

Finishing operations, which include **paper-cutting, mechanical binding, drilling, collating, folding, shrink-packaging, and inspection**, will be augmented by the comprehensive study of the properties and weights of paper stock and the methods for computing appropriate cutouts.

Extensive use will be made of printed materials, with students given the task of identifying the sequence of operations in the production of packaged pieces and other complicated printing.

Summary

In accepting the concept of two distinct Graphic Communications study areas, it follows that two separate courses of study are necessary. There are, of course, points at which the two areas overlap (as, for example, in Commercial Art) and when that does occur, each course of study must reflect the connection. It also follows that both courses must be conducted in close proximity, with the flexibility for crossover of students, joint field trips, and, at the start of each term, combined introductory instruction.

Since Graphic Arts instruction takes place in the context of actual production of printed materials, it is necessary for the instructor to use each job as *teaching content* – even though it may upset the planned order of instruction. This is a necessary concomitant of teaching Graphic Arts in a school, and requires considerable flexibility on the part of the instructor.

Graphic Communications – Preparatory, and **Graphic Communications – Mechanical**, as taught in the author's school, are each two-year courses in which instruction is offered concurrently for eleventh and twelfth grade students. Students will take either course. Those who wish to learn both areas must be treated on an individual basis – either return for a third year or take an abridged course in both areas. Each course takes a total of 450 hours during the school year, meeting 2½ hours each day, five times a week for 36 weeks.

The course taught in the Preparatory area includes:

Background Information/Typography
Copy and Art Preparation/Stripping
Camera/Darkroom
Production Management/Estimating
Forms Design and Analysis

The course taught in the Mechanical area includes:

Offset Presswork
Platemaking
Finishing Operations
Paper Stock
Letterpress/Silkscreen/Intaglio

A study of Electronic Communications concludes the course and is taught to all students.

GRAPHIC COMMUNICATIONS – Preparatory Work ("Prep")

A Few Words About the Course

The objective of the "Prep" Course of Study is to develop in the student skills in all of the preparatory functions of the Graphic Communications industry:

Copy Preparation – copyfitting, choosing type faces, formatting, proofreading, ascertaining the client's requirements.

Art Preparation – rough and comprehensive layouts, interpretation of commercial artist's requirements, pasteup, mechanicals, color overlays, scaling of illustrations, use of clip art, use of white space, separations for multicolor work, pen ruling.

Typography – phototypesetting on the CompuWriter and the Comp/Set 500, strike-on method of typesetting as on the IBM Selectric Composer, use of transfer type, display typesetting. Included is English for printers, and the use of the dictionary.

Camera – The process camera, the 3M MR-412 Camera Plate System, dark-room procedures, line and screened copy, contact prints, the PMT System, process color work, color separations, typography processors.

Stripping – layout of flats, strip-up and taping, window cutouts, opaquing, rule scribing, trim and register marks, stripping to impositions, separations.

Production Management – work flow, estimating, assignment of work and coordination within a plant, purchasing procedures, work follow-up, customer contact, preparation of the job ticket, paper calculations, record keeping.

Forms Design, Preparation, and Analysis – sketching the form, analysis of client's requirements and the equipment on which form is to be used, typesetting and ruling the form, pasteups.

In addition to the aforementioned specific skills, the student will receive instruction covering the history of Graphic Communications, proper safety procedures, equipment maintenance and housekeeping, and opportunity to study the interrelationship of the various Graphic Communications specializations.

Bibliography

This bibliography for the Graphic Communications instructor, while not pretending to be exhaustive, does represent a listing of recent works covering all areas of the trade.

Adams, J. Michael and David D. Faux, *Printing Technology – A Medium of Visual Communications* (Duxbury Press, North Scituate, Mass.) 1977

Beattie, K.W. and Dorsey Biggs, *How to Publish and Print Photomechanically* (No. American, Philadelphia, Pa.) 1967

Broekhuizen, Richard J., *Graphic Communications* (McKnight and McKnight, Bloomington, Ill.) 1973

Campbell, Edward A., Ph.D., *Safety Manual for the Graphic Arts* (Graphic Arts Technical Foundation, Pittsburgh, Pa.) 1972

Cogoli, John E., *Photo Offset Fundamentals* (McKnight and McKnight, Bloomington, Ill.) 1973

Halpern, Bernard R., *Offset Stripping/Black & White* (Graphic Arts Technical Foundation, Pittsburgh, Pa.) 1972

Halpern, Bernard R., *Color Stripping for Offset* (Graphic Arts Technical Foundation, Pittsburgh, Pa. 15213)

International Paper Co., *Pocket Pal – A Graphic Arts Production Handbook, 11th Edition* (International Paper, N.Y., N.Y.) 1974

Jaffe, Erwin, *Contact Printing,* 3rd Ed. (GATF) 1964

Jaffe, Erwin, *Halftone Photography* (GATF) 1975

Jaffe, Erwin et al, *Color Separation Photography* (GATF) 1959

Karch, R. Randolph and Edward J. Buber, *Graphic Arts Procedures,* (American Technical Society, Chicago) 1973

Lasday, Stanley B., Editor – *Handbook for Graphic Communications* – 9 soft cover volumes (GATF) 1972

Levenson, Harvey R. et al, *Art and Copy Preparation – An Introduction to Phototypesetting* (GATF) 1974

Shapiro, Charles, ed., *The Lithographers Manual, 5th Ed.* (GATF) 1974

Silver, Gerald A., Ed. D. – *Modern Graphic Arts Paste-Up* (American Technical Society, Chicago, Ill.) 1973

Silver, Gerald A.; *Printing Estimating* (ATS) 1973

Southworth, Miles, *Color Separation Techniques* (No. American) 1974

Stevenson, George A., *Graphic Arts Encyclopedia* (McGraw-Hill, New York, N.Y.) 1968

Technical Services Reports (GATF, Pittsburgh, Pa.)

Research Project Reports, (GATF, Pittsburgh, Pa.)

United States Government Printing Office, *Style Manual,* (Washington, D.C.) 1973

United States Navy – *Lithographer 3 & 2 – Rate Training Manual,* (NAVPERS 10452-B) (U.S. Government Printing Office, Stock No. 0500-131-0100, Washington, D.C.) 1969

INSTRUCTOR ACTIVITY

UNIT 1 – EXPLORING GRAPHIC COMMUNICATIONS

1. Discuss typical shops in graphics communications.

2. Discuss salaries and fringe benefits.

3. Slide presentation on "What Is Graphic Arts?" (May be prepared locally, or commercial presentations on this topic may be available.)

4. Tour the work areas in Graphics Communications, Commercial Art, and Drafting. Show how the areas relate to each other.

5. Film (DuPont) – "We Used To Call It Printing."*

6. Lead student discussion on the job opportunities that were found through their search in the classified section of the local paper.

* "We Used To Call It Printing" – 16mm sound – 23 minutes – color – free rental

E. I. DuPont de Nemours & Co.
Public Relations Office
Chestnut Run
Wilmington, Delaware 19898

Filmstrips, reports, audiovisuals, training materials, available from

Graphic Arts Technical Foundation
4615 Forbes Avenue
Pittsburgh, Pennsylvania 15213
(412) 621-6941

Complete listing available in Products & Services Guide published annually. Special rates on all materials for GATF Members. Educator's annual dues $15.00.

UNIT 2 – SHOP SAFETY

A. Shop Safety

1. Discuss safety rules, stress dangers, and explain about lost work-hours in industry because of injuries.
2. Present slides on safety. (May be prepared locally or commercial presentations on this topic may be available.)
3. Post list of accident-free days on section of blackboard.
4. Issue aprons and gloves.

B. Student Responsibilities

1. Discuss each of the listed student responsibilities. Ask for questions and suggestions.
2. Show a film on shop safety.
3. Discuss film.

C. Rules for Shop Safety

1. Carefully review each of the safety rules.
2. Inform students that they may not put hands on equipment until the signed Safety Rules list is returned.

D. Fire Prevention

1. Show films on fire-fighting methods and fire prevention.
2. Discuss fire prevention and fire-fighting techniques.
3. Describe the various types of fires.
4. Discuss why rags are placed in safety cans.
5. Discuss each specific rule on the fire-prevention list.
6. Who leads the class out of the room when the fire alarm is sounded?
7. List the areas of the job where the potential for a fire is the greatest.

UNIT 3 – HISTORY AND TECHNICAL BACKGROUND

1. Conduct discussion on historical survey:
   a. How did people record history before they had printing?
   b. How were books copied before movable type was invented?
   c. The history of paper and ink. Were they invented before or after movable type?
   d. Hand-composed and automatically composed type.
2. Demonstrate each of the following processes: lithography, letterpress, and intaglio.
3. Formulate, with the class, a definition of "image" as used in the Graphic Communications industry.
4. Discuss the difference between image generation and methods of reproduction.
5. Discuss the various methods of image generation.
6. Display examples of Linotype slugs, Ludlow, and engraved cuts.
7. Make sure each student understands the differences between hot type and cold type.
8. Demonstrate a phototypesetter as a means of "typing with light."
9. Assign questions in text.

UNIT 4 – WORK FLOW IN A MODERN SHOP

1. Discuss variations in work-flow from plant to plant. Show differences between a newspaper and a commercial shop.

2. Describe the work of a printing salesman.

3. Describe the production department and the opportunities in that area.

4. Discuss the work and the responsibilities of the production person.

5. Tour the school shop and discuss the functions of each department.

6. Arrange a field trip to a commercial plant and a newspaper.

7. Discuss work-flow chart. Ask students to suggest how this work-flow might be improved.

8. Discuss how the work-flow chart adapts to the school-shop operation.

UNIT 5 – TYPOGRAPHY

A. Terminology

1. Explain differences between printer's meanings and the common, everyday meanings of numerous printing terms.

2. Use "I Know – A Vocabulary Game for the Printing Trade" to familiarize students with selected terms and definitions. (The "I Know" game is available from the New Jersey Vocational Curriculum Laboratory.)

3. Describe copyfitting.

4. Explain differences between cold type and hot type. Show samples.

5. Explain the em-key functions on the phototypesetter.

6. Demonstrate manual and automatic justification.

7. Exhibit chart of type faces.

8. Show samples of metal slugs.

9. Explain key functions for obtaining leaders.

10. Demonstrate Quad Left (QL key).

11. Demonstrate automatic ruling on composing machines.

12. Assign students to:

    a. Convert 3 inches to picas.
    b. Convert 4½ inches to picas.

14. Have students add new terms when needed.

15. Quiz students on a sample of the definitions.

B. Type and Space Measurements

1. Carefully explain the pica/point system of type measurement.

2. Illustrate the necessity of learning printer's measurements, i.e., for copyfitting, for using various typesetting machines, etc.

3. Describe the parts of a type face by printing a word containing both an ascender and a descender on the blackboard. Show the ascender, descender, and X-height.

4. Quiz students on their understanding of the type parts.

5. Explain vertical type measurement, using both a chalk-talk and a display of type samples.

6. Prepare copies of typewritten alignment of characters and typeset alignment.

7. Explain in detail the matter of width of different letters of the alphabet. Show how the different typesetting machines adjust for the differing widths.

8. Describe the unit system as used on the CompuWriter, and the charts that are used with the machine.

9. Describe and illustrate expanded, condensed, regular, italic, and bold type faces.

C. Handling the Client's Copy

1. Describe the procedures for handling the client's copy.

2. Explain the importance of the steps taken to protect the client's copy.

3. Make assignment. Have available at least four pages of typed manuscript copy, preferably copy which may be used for a typesetting project.

D. Copy Markup

1. Explain the basic functions of the markup person. Emphasize the importance of proper markup and consultation with the client when needed.

2. Briefly explain the proofing marks needed for bold or italic copy, upper or lower case letters, and obvious errors in typing.

3. Go over the sample markup with the class.

4. Assign student activity on markup.

5. Review the markup and the obvious corrections.

E. Type Classifications

1. Describe the differences in type styles.

2. Point out examples from charts and printed samples.

F. Type Families

1. On chalkboard have a student demonstrate:

   a. ascender
   b. descender
   c. X-height

2. With illustrations, point out the difference in meaning between "typeface," "type font" and "type family."

3. Illustrate several families of type.

4. Show condensed and extended faces.

5. Make assignment.

6. Have each student review own contribution, to be checked by fellow students.

UNIT 6 – COPYFITTING

1. Describe the copyfitting requirements.

2. Explain the five major factors.

3. Discuss the exceptions, e.g., I.B.M. Executive typewriter faces have varying character widths that do not permit exact character counting by simple measurement.

4. Illustrate copyfitting with samples.

5. Emphasize the importance of accurate character counts and the variation in different typewriter type measurements. Caution students on copy containing many upper-case letters.

6. Demonstrate methods of obtaining average character counts.

7. Show samples of prepared type-count charts issued by type founders and type houses.

8. On the chalkboard, prepare sample copy to fit into a designated size. Make the calculations and compensate for extra space.

9. Explain the formula for typefitting.

10. Review the entire procedure.

11. Assign student activity.

12. Make sure student has handled shortfall or overfill correctly.

UNIT 7 – THE COMPUWRITER I

A. Functions (Reference: CompuWriter Application Manual pp 1-4)

1. Point out each part of the machine. Show how each part performs a particular function.

2. Make a run through of the operating procedures. Have students duplicate the dry run.

B. Pre-Operating Procedures (Ref: pp. 4-6)

1. Illustrate the pre-operating checks.

2. Assign and supervise student activity.

C. Keyboard Console (Ref: pp. 6,7)

1. Review the unit system as used on the CompuWriter.

2. Prepare in advance printed material that can be used to demonstrate the function of each of the keys, displays, lights, and switches on the console.

3. Taking these controls in logical groups, demonstrate the function of each as it relates to the prepared printed matter.

4. Using the same printed matter, have the students point out (in the same groups) which key, light, or switch affects which portion of the material.

5. Using fresh printed material that the students have not seen, have the students point out the keys, lights, and switches that affect each portion.

D. Preliminary Operating Procedure

1. Demonstrate the preliminary operating procedure.

2. Assign each student to perform the procedure.

3. Warn students to make all the preliminary checks before proceeding with a typesetting assignment. Special attention should be made to correct leading, the width and securing of the pulley screw, and the position of the 1X lens baffle and switch.

E. CompuKwik

1. Demonstrate the operation of the CompuKwik

2. Stress the caustic nature of the chemicals and the safety precautions that should be taken.

3. Have students develop their own typeset materials as they produce them.

F. Setting Justified Matter (Ref: page 9)

1. Go over the justification example illustrated, making sure that all students understand the process.

2. Demonstrate the use of the QL key and the Return key.

3. Briefly introduce the discretionary-hyphen function and its application.

4. Assign the student activity on typesetting.

5. Provide the following tools: pica rule, line gauge for checking leading, and the unit-count chart.

G. Insert-Space Function

1. Describe the purposes of the Insert-Space function.

2. Demonstrate each of its applications.

3. Explain flush-left, ragged-right columns, and the use of either the IS or the QL keys.

4. Assign the student activities on copysetting.

H. Line Calculation and Leadered Lines

1. Bring to class examples of printed materials that necessitate the use of line calculation.

2. On the blackboard show the following function keys: Calculate-Line, Cancel-Line, Character-Input, En (or Em) Leader, Repeat, Cancel-Character.

3. Demonstrate the sequence of operations, using the example given.

4. Emphasize the need for accuracy in reading the character display.

5. Assign the student activities.

I. The Discretionary-Hyphen Key

1. Have available a supply of dictionaries or word-division guides.

2. Make up in advance a list of properly divided words and improperly divided words, e.g., mac-hine, types-etter, prep-are, etc.

3. Carefully explain the function of the Discretionary-Hyphen key and demonstrate its use on the machine.

4. Point out how dictionaries and word-division guides can be used to determine correct syllabication.

5. Stress that improper word division reduces readability and often causes the reader to have to go back and reread. Give examples from list.

6. Make the assignment, stressing that the dictionary or word-division guide should be consulted in case there is any doubt as to the proper division.

J. The Plus 1 Unit Function (Ref: page 10)

1. Explain the function and use of the + 1U key.

2. Emphasize the importance of striking the key only when in the shift position.

3. Demonstrate two different uses for the +1U function, as given in the lesson.

4. Assign copysetting tasks.

K. Plus 1 Point Function (Ref: page 11)

1. Explain and demonstrate the use of the +1P key. Emphasize the need for the unshift position.

2. Discuss when this function might be needed, e.g., before and after a line with a symbol in it, for superior and inferior numbers, for extra space in an outline, etc.

3. Make the assignment.

L. Space-Only Function (Ref: page 10)

1. Describe the Space-Only function and demonstrate it on the machine.

2. Discuss possible situations where this function could be helpful, e.g., in alining items when the alining space is not known (often introductory words or symbols) or typesetting within a margin.

3. Assign the typesetting task.

M. Flash-Only Function (Ref: page 10)

1. Describe the Flash-Only function and demonstrate the example on the machine.

2. Discuss possible situations where this function could be helpful, e.g., alinement of items of unequal unit width.

3. Assign the typesetting task.

N. Multiple Justification (Ref.: page 12)

1. Multiple Justification is used on the CompuWriter in place of an ordinary tab key. Display examples of printing where Multiple Justification could have been used.

2. Describe the Multijust function. Demonstrate normal justification procedure and then Multijust procedure of the several types illustrated.

3. Emphasize the importance of using Multijust in the unshift position.

4. Emphasize *not* using Multijust after setting the last column (a common error of novices).

5. Assign the student activities, carefully explaining how to do the last exercise.

O. Double-Size Setting (Ref: page 13)

1. Describe and demonstrate all the steps to be taken when setting type to 2X size.

2. Make the assignment.

P. Maintenance

1. Demonstrate the routine maintenance of CompuWriter I and CompuKwik that the students will be doing.

2. Stress the corrosive nature of the chemicals used in the CompuKwik, and the need for precautions to prevent injury.

UNIT 8 – THE IBM SELECTRIC COMPOSER

Note: The IBM Selectric Composer is particularly useful in the preparation of *forms,* as the forms-design element includes both vertical and horizontal line-ruling capabilities. It is used extensively in the forms-printing industry.

A. Component Parts and Their Functions

1. Bring to class a variety of materials typed on the Composer.
2. Point out the various parts of the Composer as listed in the lesson and explain and demonstrate their operation.
3. When pointing out the parts, point out how the Composer is like and how it differs from an ordinary typewriter.
4. Explain the tabulating process.

B. Preliminary Procedures

1. Assign activity.
2. Encourage students to use different font styles and sizes.

C. Vertical Spacing (Reference: "IBM Selectric Composer Training Guide," pg.7)

1. Be sure all students have access to an IBM Conversion Scale and a plastic leading scale.
2. Assign activity and explain it.
3. Discuss best way of checking vertical spacing when there are several lines of type.
4. Discuss how to ascertain the type size for single lines, such as headlines.

D. The Unit System

1. Explain how the Composer uses two types of measures – the *pica,* which is always the same, and the *unit*, which varies with the size of the font. The Composer characters vary in width from 3 to 9 units; all *numbers* are 6 units wide. These unit measures differ from those used in other typesetting systems.
2. Post the Unit Count chart.
3. Prepare a handout sheet (or use the chalkboard) with some typical items where a unit-count might be needed, e.g., **Note:** , **Directions:** , **NOTE:** **(a)** , **(b)** , **(c).**

E. Basic Machine Adjustments (Ref: Instruction Manual, pp. 10ff)

1. Review *all* of the basic adjustments.

2. Stress the steps to be taken when changing from one size of type to another.

3. Assign the exercise.

F. Justification (Ref: Instruction Manual, pp. 19ff)

1. Demonstrate all the steps in typing copy in parallel justification, as described in Procedure.

2. Assign the first exercise.

3. Explain the differences between parallel and serial justification, and the advantages and disadvantages of each.

4. Assign the second exercise.

G. Justification Refinements and Corrections (Ref: pp. 24ff)

1. Describe in detail all the situations discussed in this lesson, and explain how each is to be handled.

2. Assign the exercise.

3. Stress the need to keep listening for the bell that signals the approach of the end of the line.

H. Justification Variations (Ref: pp. 27ff)

1. Bring to class some effective examples of the use of white space. Show how the white space in a format is part of the general effect. Illustrate on chalkboard with additional variations of justification.

2. Explain the several methods of reserving white space, as described under Information.

3. Stress the flexibility of the machine and the variations obtainable with the use of some imagination.

I. Paragraph Indentions and Numbered Paragraphs (Ref.: pp. 30, 31)

1. Demonstrate paragraph indention.

2. Have students figure out the best method of indenting for different sizes of indents, different sizes of type, and different space-bar values.

3. Demonstrate setting numbered paragraphs. Explain why it is important to use a space-bar value of 3 units.

4. Assign the exercise. Make sure students understand the procedures to be followed.

J. Slanting Margins (Ref.: pp. 33, 34)

1. Describe left-slanting margin and demonstrate how to obtain one.

2. Describe right-slanting margin and demonstrate how to attain one.

3. Discuss with class how machine is "fooled" into slanting the right-hand margin when the operator omits the fixed-spacing letters.

4. Describe and demonstrate double slanting margins.

5. Discuss with the class how this technique would be used to type around odd-shaped illustrations, or obtain other unusual effects.

6. Assign the exercise. Make sure all students understand the procedure to be followed.

K. Leader Lines (Ref: pp. 42ff)

1. Show various uses for leader lines.

2. Demonstrate the procedure for setting leader lines where the right-hand column consists of a number only.

3. Be sure each student knows how to determine the proper Space-Bar value for the dot leaders.

4. Have students explain why 9 is the correct Space-Bar value for large type where the dots are to be a full pica apart.

5. Assign the exercise.

L. Leaders With Justified Right-Hand Columns (Ref.: pp. 44ff)

1. Show a few examples of leaders used with justified right-hand columns.

2. Demonstrate step by step the setting up of a leadered table with justified left and right columns.

M. Horizontal Centering (Ref.: pp. 47ff)

1. Stress the need for accuracy in centering, particularly when centering in boxes or columns.

2. Demonstrate centering on an 8½ inch page.

3. Demonstrate centering in a column.

4. Assign the exercise. Have available copies of page 100 with the copy in the three center boxes eliminated.

N. Vertical Centering (Ref.: pp. 52ff)

1. Stress the need for accuracy when doing vertical centering in small spaces.

2. Review the concepts of type size relative to point size, base line, ascenders, descenders, cap height.

3. Explain the mathematics involved in typing one-line copy.

4. Explain the mathematics involved in typing two- or three-line copy.

5. Point out differences in capital-letter sizes as shown on chart.

6. Assign the exercise. Have available sheets with the six rectangles, with copy eliminated.

7. Explain how the Vertical Centering Charts work.

8. Have the students locate the correct figure on the charts for several different sets of data, e.g., two lines of Aldine Roman 8-point type, upper and lower case, with 2 points of leading, to be centered in a space of 33 points.

O. Tabulations (Ref.: pp. 56ff)

1. Bring to class examples of tabulated material.

2. Emphasize that tabs can be set only on whole-pica numbers.

3. Point out which examples might need tabbing at locations that are *not* at whole picas, and how such locations can be found.

4. Demonstrate the tabbing exercise.

5. Stress the need for using judgment in locating tabs.

6. Introduce the character-count chart, which can be helpful in tabbing.

7. Assign the exercise.

P. Ribbon Mechanism (Ref.: pp. 69ff)

1. Demonstrate removal and installation of ribbons.

2. Have students do the same.

Q. Care and Maintenance (Ref.: pp. 73ff)

1. Caution on preventive maintenance – keeping machine covered whenever it is not in use.

2. Caution against using anything but soap and water to clean the parts. Warn against lubrication.

3. Describe and demonstrate removal, cleaning, and reinsertion of parts.

4. Have students practice removal, cleaning, and reinsertion of parts.

UNIT 9 – THE COMP/SET

A. Functions (Reference: Comp/Set Operating Instructions, pp. 3-8)

1. Point out and demonstrate the parts of the Comp/Set section by section. To do this, begin a typesetting job and show students in a general way how each part works.

2. Quiz:

   a. What purpose does the function field on the screen serve?

   b. May editing be done on the *upper line* of the keyboarded copy?

   c. What is the function of the beige-colored keys on the keyboard?

   d. How many type styles are contained on a disc?

   e. What two elements of the typesetter require the operator's attention?

B. Preliminary Procedures (Ref.: pp. 7,8)

1. Demonstrate the preoperating procedures.

2. Have the students perform the procedures.

C. Input Procedures (Ref.: pp. 9-13)

1. Describe and demonstrate the five input procedures, questioning students to be sure each procedure is understood before going on to the next one.

2. Quiz on sizes:

   a. What is the Size Command for 30-point type? For 5½-point? For 9-point?

   b. How many type sizes may be used on one line?

   c. What is the range of type sizes for text matter? For display matter?

3. Quiz on fonts:

   a. What is a font?

   b. How many fonts are available on each disc?

   c. How would you enter Chelmsford Demi-Bold in the Function Field? (Font Key + font number)

   d. If the font needed is located on another disc, what procedure should be followed?

4. Quiz on Line Length

   a. Can a line length be changed during a job? How?

   b. How many picas equal one inch?

   c. How would you enter the following in the Function Field?
      LL 35 picas
      LL 20¼ picas
      LL 8 picas
      LL 10½ picas

5. Review concept of leading and distinguish between primary and secondary leading.

6. Quiz on primary leading:

   a. How is leading measured?

   b. How would the following be entered in the Function Field?
      Primary Lead 8 points
      Primary Lead 11½ points
      Primary Lead 13¼ points

7. Quiz on secondary leading:

   a. When is secondary leading used?

   b. How would the following be entered in the Function Field?
      Secondary Leading 4 points
      Secondary Leading 6 points
      Secondary Leading 2½ points

8. Review all the input functions.

9. Assign student activity.

D. Operating Modes (Ref.: pp 14-16)

1. Describe and demonstrate the Manual operating mode.

2. Make assignment.

3. Describe and demonstrate the Automatic mode.

4. Discuss times when the Manual mode would be more suitable to use than the Automatic mode.

E. Flush Left, Flush Right, and Center (Ref.: page 16)

1. Describe and demonstrate, in turn, the flush-left, flush-right, and center functions.

2. Assign the student activity.

F. End of Line (Ref.: pp. 17,18)

1. Explain what an end-of-line function is.

2. List all the end-of-line functions encountered up to now and demonstrate each.

G. End of Job/Accumulated Leading (Ref.: pp. 17,18)

1. Explain when end-of-job command would be used and how to effect it. Demonstrate.

2. Explain function of Accumulated Leading indicator and demonstrate how the numbers accumulate.

3. Read several hypothetical readings of ACL.

4. Explain when you might wish to reset ACL to zero, and how it is done.

5. Emphasize the need to learn the procedures for later operations on the Comp/Set 500.

H. Character and Word Erase and Cancel Line

1. Describe and demonstrate the three different ways of erasing.

2. Make a list of the functions encountered so far that use the Control Key, and describe each.

3. Make assignment, observing each student as he/she uses the different methods of making corrections.

I. Case and Disc Formats (Ref.: pp. 18-20)

1. Explain the three cases on the Comp/Set 500 and how they are accessed.

2. Go over a typical job-format card, pointing out the super-case characters available and how they are generally used.

3. Do the same for a typical book-format card.

4. Have students practice setting in lower case, upper case, and super case.

5. Assign student activity. Be sure student posts format chart at machine before starting job.

J. Word Spacing and Letterspacing (Ref.: pp. 20, 21)

1. Go over examples of printed material, pointing out the variations in the word spacing of justified lines. Discuss the difference in effect between "tight" lines and more open ones.

2. Demonstrate how to enter MIN and MAX values for word spacing. Note how they appear on the Function Field Display.

3. Demonstrate how to change MIN or MAX values once a line has been typed.

4. Explain when the Typesetter starts to add interletter spaces, and how it does this.

5. Explain how letterspacing instructions are keyed into machine.

6. Assign student activity.

K. Character Widths and Fixed Spaces

1. Review the differences between the character widths on an ordinary typewriter and on a typesetting machine.

2. Explain the unit system used on the Comp/Set.

3. Discuss the need for fixed spaces in the course of typing. Display examples.

4. Describe and demonstrate the use of EM and EN spaces. Show how they can be combined as needed, as in outlines and charts.

5. Show how to use the Fixed Space command, and show printed examples of its use.

6. Show where one would use a one-time-only space value, and how to achieve it.

7. Assign the student activity, making sure that students know the procedure before they start.

L. Leaders (Ref.: pp. 24, 25)

1. Show examples of different types of leaders and ruled lines.

2. Describe and demonstrate the standard leader functions.

3. Show how to substitute a non-standard leader, such as an asterisk or an X.

M. Ruled Lines (Ref.: pp. 25, 26)

1. Demonstrate underlining with the use of Secondary Leading.
2. Compute with the class the appropriate leading for several different fonts and sizes, upper and lower case.

N. Fixed Space Leaders and Leader Width Command (Ref.: pp. 26, 27)

1. Demonstrate use of fixed spaces to achieve flush-left and flush-right effect.
2. Explain the Leader Width command.

O. Kerning (Ref.: pp. 27-29)

1. Display a couple of headings that have and have not been kerned.
2. Describe and demonstrate the kerning command.
3. Discuss what letters often require kerning.
4. Describe and demonstrate the Auto Kern command.
5. Assign student activities.

P. Reverse Carriage (Ref.: pp. 28, 29)

1. Illustrate types of matter normally inserted into left-hand margins.
2. Demonstrate the use of the Reverse Carriage function for this purpose.
3. Explain the frequent need for counting units for copyfitting.
4. Demonstrate the use of the Reverse Carriage function for counting units and copyfitting.
5. Make assignment.

Q. Add Lead (Ref.: p. 30)

1. Explain the Add-Lead concept with some appropriate printed illustrations.
2. Demonstrate the Add-Lead function.
3. Make assignment.

R. Tabular Matter (Ref.: pp. 30-32)

1. Explain in a general way the way tabular material is set up on the Comp/Set.

2. Work out with the class the arithmetic for the vertical spacing of several different tabulation problems.

3. Demonstrate the tabbing procedure.

4. Refer to the second student activity on page 143 and work out the tabbing with the students.

5. Assign student activity.

UNIT 10 – PROOFREADING

1. Explain all the proofreaders' marks, demonstrating them on the chalkboard.

2. Describe the standard procedures for proofreading.

3. Review the illustrated example.

4. Make the assignment. Have students use colored pencil and a dictionary.